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Observations of Comets made at the Orwell Park Observatory in the years 1886–87. By John I. Plummer, M.A.

Comet VII. 1886 . . . (*Finlay.*)

1886.	Greenwich Mean Time.	Comet—Star. Δα	Comet—Star. Δδ	No. of Comps.	Comet's App. R.A.	Log. $(p \times \Delta)$	Comet's App. Dec.	Log. $(p \times \Delta)$	Red. to App. Place.		Comp. Star.
	h m s	m s	′ ″		h m s		° ′ ″		s	″	
Nov. 18	6 21 28	+0 52·04	+ 7 36·1	6–6	20 10 47·49	9·3155	−22 41 20·5	0·9137	+1·72	+11·9	1
24	6 32 58	+1 46·26	− 2 13·4	7–7	20 39 35·13	9·3289	−20 49 17·2	0·9092	+1·74	+12·8	2
29	6 25 24	+1 11·30	− 3 2·6	8–8	21 4 17·81	9·2782	−18 55 39·9	0·9090	+1·77	+13·5	3
30	6 6 22	−2 19·51	− 3 38·1	3–3	21 9 15·91	9·2107	−18 31 9·1	0·9113	+1·80	+13·6	4
Dec. 14	6 37 39	−1 43·57	− 2 44·9	6–6	22 21 8·75	9·2513	−11 31 9·3	0·8898	+1·95	+15·0	5
16	6 53 56	+3 24·06	−10 35·6	6–6	22 31 32·30	9·2944	−10 22 5·1	0·8843	+1·96	+15·2	6
18	7 1 42	+2 8·14	− 2 6·6	8–8	22 41 53·68	9·3084	− 9 11 27·5	0·8797	+2·00	+15·3	7
19	6 33 28	−1 57·44	+ 0 26·6	8–8	22 46 56·83	9·2100	− 8 36 17·3	0·8806	+2·04	+15·2	8
20	6 53 59	−1 37·89	+ 0 19·3	9–8	22 52 9·94	9·2765	− 7 59 38·6	0·8766	+2·05	+15·3	9
23	6 54 40	−2 17·95	+ 8 39·3	8–8	23 7 31·47	9·2657	− 6 10 10·0	0·8698	+2·11	+15·3	10
25	6 43 3	−0 52·98	+ 4 16·7	8–8	23 17 39·48	9·2163	− 4 56 47·2	0·8655	+2·14	+15·4	11
27	7 36 54	+1 37·75	− 2 30·7	7–7	23 27 55·70	9·3670	− 3 41 42·2	0·8573	+2·17	+15·5	12
28	8 12 14	−1 14·36	+ 2 58·4	8–8	23 33 5·00	9·4342	− 3 3 26·9	0·8529	+2·21	+15·4	13
29	8 5 34	−1 31·64	+ 7 45·5	8–8	23 38 3·67	9·4205	− 2 26 39·4	0·8511	+2·23	+15·3	14
30	6 29 19	+0 52·80	− 4 17·8	3–3	23 42 43·71	9·1348	− 1 52 40·5	0·8516	+2·24	+15·4	15

November 18.—Comet fairly bright but without marked nucleus.

November 29.—Windy, clock not well heard at times. November 30–December 30.—Comet faint, moonlight.

December 14–16.—Observations difficult owing to the proximity of a small star.

December 23.—Comet faint from haze.

December 27–29.—Observations interrupted by cloud; at times the comet was very faint.

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1887.		Greenwich Mean Time.	Comet—Star $\Delta\alpha$	Comet—Star $\Delta\delta$	No. of Comps.	Comet's App. R.A.	Log $(p\times\Delta)$	Comet's App. Dec.	Log. $(p\times\Delta)$	Red. to App. Place.		Comp. Star.
		h m s	m s	′ ″		h m s		° ′ ″		s	″	
Jan.	12	6 36 20	+1 8·05	−3 3·8	8–8	0 44 57·12	9·1178	+5 44 18·3	0·8062	−0·56	−5·1	16
	20	6 54 18	−2 37·93	−0 39·7	8–8	1 20 29·72	9·1854	+9 50 4·9	0·7776	−0·41	−5·5	17
	26	7 1 32	+4 6·01	−5 54·9	8–8	1 45 39·96	9·2126	+12 31 34·1	0·7569	−0·37	−5·5	18
Feb.	12	8 27 9	+1 23·08	+0 54·1	7–7	2 50 20·26	9·4549	+18 25 45·3	0·7349	−0·23	−6·0	19
	25	8 33 37	+1 7·85	−2 35·8	6–6	3 33 45·13	9·4861	+21 25 46·3	0·7181	−0·22	−6·3	20

January 12.—Comet faint, light clouds passing.
January 20–26.—The comet is still fairly bright but difficult to observe. The R.A. comps. are the more doubtful.
February 12–25.—Comet excessively faint.

Comet VIII. 1886 . . . (*Barnard, January* 23, 1887.)

1887.		Greenwich Mean Time.	Comet—Star $\Delta\alpha$	Comet—Star $\Delta\delta$	No. of Comps.	Comet's App. R.A.	Log. $(p\times\Delta)$	Comet's. App. Dec.	Log. $(p\times\Delta)$	Red. to App. Place.		Comp. Star.
		h m s	m s	′ ″		h m s		° ′ ″		s	″	
Feb.	13	7 19 3	−1 1·98	−1 26·8	5–5	20 6 55·93	9·5302	+37 59 31·7	0·8895	−1·40	−3·3	21
	16	7 19 44	−1 29·83	−4 16·9	7–7	20 16 39·26	9·5363	+39 49 22·3	0·8886	−1·39	−3·9	22
Mar.	11	7 50 18	+2 31·00	+0 21·5	2–2	21 41 4·33	9·5590	+52 29 33·4	0·8848	−1·32	−7·0	23
	12	8 20 28	+1 13·07	−0 14·8	7–7	21 45 16·23	9·4774	+52 58 11·9	0·9011	−1·33	−7·1	24
	16	7 51 53	−0 19·86	+4 13·8	7–7	22 1 53·64	9·5811	+54 45 54·4	0·8783	−1·33	−7·4	25
	18	8 14 44	+2 0·72	−0 56·5	7–7	22 10 30·40	9·5283	+55 37 12·5	0·8896	−1·33	−7·6	26
Apr.	27	11 48 39	−2 26·33	+5 32·8	7–7	1 17 22·61	9·3488$_{n}$	+65 34 43·5	0·8852	−1·54	−9·4	27
May	14	11 40 13	+3 45·29	+6 21·8	8–8	2 31 7·83	9·2377$_{n}$	+66 33 27·4	0·8854	−1·53	−10·3	28
	20	11 52 2	−5 18·93	+0 19·3	8–8	2 54 43·68	9·3426$_{n}$	+66 39 19·2	0·8818	−1·54	−10·2	29

February 13.—Comet faint from haze.
March 11.—Comet excessively faint, and the observation doubtful in consequence.
March 16.—The comet is small and faint but observation satisfactory.

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Comet IX. 1886 . . . (*Barnard-Hartwig.*)

1886.		Greenwich Mean Time.	Comet—Star. Δα	Comet—Star. Δδ	No. of Comps.	Comet's App. R.A.	Log. (p×Δ)	Comet's App. Dec.	Log. (p×Δ)	Red. to App. Place.		Comp. Star.
		h m s	m s	′ ″		h m s		° ′ ″		s	″	
Oct.	22	16 42 22	−2 6·29	+ 8 5·6	6–6	11 17 42·49	9·5231$_n$	+ 4 3 43·1	0·8305	+0·97	− 7·8	30
Nov.	5	16 45 29	+0 20·93	+ 0 34·9	9–8	12 6 3·84	9·5173$_n$	+ 8 0 40·6	0·8153	+1·03	− 9·2	31
	7	16 43 55	+2 16·80	+ 1 46·7	8–8	12 14 57·02	9·5205$_n$	+ 8 43 31·0	0·8130	+1·03	− 9·4	32
	18	17 10 30	−1 50·10	+ 2 43·0	8–8	13 18 38·12	9·5212$_n$	+13 18 46·2	0·7909	+0·88	− 8·8	33
	18	17 18 58	−3 28·28	+ 1 21·5	5–6	13 18 40·49	9·5125$_n$	+13 18 56·6	0·7880	+0·88	− 8·7	34
	23	17 11 29	+0 58·74	− 1 59·0	9–9	13 58 27·51	9·5424$_n$	+15 29 23·1	0·7876	+0·78	− 7·6	35
	30	17 39 52	+1 32·09	− 7 2·9	8–8	15 7 30·34	9·5568$_n$	+17 42 20·0	0·7829	+0·61	− 3·6	36
Dec.	1	17 30 6	−2 22·70	− 6 22·7	8–8	15 18 17·05	9·5670$_n$	+17 51 47·2	0·7903	+0·58	− 2·5	37
	2	17 28 9	−1 5·07	− 4 15·7	8–8	15 29 18·42	9·5715$_n$	+17 57 51·7	0·7943	+0·57	− 1·7	38
	4	17 38 6	+3 5·85	+ 2 48·9	8–8	15 51 44·89	9·5736$_n$	+18 0 4·5	0·7965	+0·57	− 0·4	39
	9	17 44 1	−2 31·59	− 3 11·5	8–8	16 47 22·41	9·5792$_n$	+17 2 48·5	0·8142	+0·58	+ 4·6	40
	12	5 56 55	−1 11·39	+ 2 38·0	8–8	17 13 42·68	9·5775	+16 2 50·7	0·8300	+0·64	+ 6·4	41
	14	5 52 47	+1 33·83	+ 7 30·2	7–7	17 33 26·77	9·5761	+15 2 53·6	0·8254	+0·70	+ 7·6	42
	16	6 1 39	−1 59·73	+ 0 11·0	7–7	17 51 59·71	9·5738	+13 55 11·9	0·8270	+0·76	+ 9·2	43
	18	6 9 14	+3 43·67	+ 1 27·7	6–6	18 9 11·45	9·5716	+12 41 32·2	0·8288	+0·81	+ 9·8	44
	19	5 51 59	−0 7·78	+ 5 8·2	8–8	18 17 10·02	9·5676	+12 3 47·5	0·8231	+0·85	+10·6	45
	20	6 6 48	+1 15·55	−10 31·7	8–8	18 24 59·31	9·5686	+11 24 18·7	0·8280	+0·87	+10·9	46

October 22.—Sky very hazy. The comet rather indistinct, being within the lunar halo.
November 5–December 9.—Windy, clock not well heard.
December 14.—Sky hazy, and the definition at this altitude not good.

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1886.	Greenwich Mean Time.	Comet—Star Δα	Comet—Star Δδ	No. of Comps.	Comet's App. R.A.	Log. (p×Δ)	Comet's App. Dec.	Log. (p×Δ)	Red. to App. Place.		Comp. Star.
	h m s	m s	′ ″		h m s		° ′ ″		s	″	
Dec. 23	5 54 51	−1 50·41	− 5 35·5	8–8	18 46 15·23	9·5610	+ 9 25 46·5	0·8262	+0·97	+12·2	47
25	5 54 33	+0 55·71	− 1 21·4	8–8	18 58 59·37	9·5577	+ 8 6 32·2	0·8281	+1·03	+12·4	48
30	5 43 42	−1 7·61	+ 7 58·0	8–8	19 26 22·99	9·5468	+ 4 55 20·2	0·8322	+1·17	+13·3	49
31	5 46 44	+2 16·25	+ 1 13·0	7–7	19 31 12·45	9·5475	+ 4 18 19·7	0·8338	+1·18	+13·2	50
1887. Jan. 2	5 39 33	+1 56·57	− 7 10·6	4–4	19 40 19·56	9·5424	+ 3 7 34·6	0·8354	−1·71	+ 5·0	51
8	5 51 14	−1 59·63	+ 0 46·7	4–4	20 4 0·38	9·5479	− 0 8 28·8	0·8418	−1·73	+ 3·2	52
10	5 48 34	+2 44·11	+ 5 16·0	6–6	20 10 53·45	9·5472	− 1 7 42·2	0·8431	−1·72	+ 2·8	53

December 23.—Sky hazy near the horizon and the comet at times, not well seen.
January 2.—Comet faint from haze and moonlight.
January 8.—Comet very faint owing to low altitude and haze.
January 10.—Comet faint and two of the comparisons are rather doubtful.

Comet II. 1887 . . . (*Brooks, January* 23, 1887.)

1887.	Greenwich Mean Time.	Comet—Star. Δα	Comet—Star. Δδ	No. of Comps.	Comet's App. R.A.	Log. (p×Δ)	Comet's App. Dec.	Log. (p×Δ)	Red. to App. Place.		Comp. Star.
	h m s	m s	′ ″		h m s		° ′ ″		s	″	
Feb. 12	7 37 10	−0 53·65	− 1 15·9	8–8	1 23 10·06	0·0810	+75 17 5·0	0·0379n	−0·96	+10·9	54
13	8 13 48	+1 29·89	− 0 59·2	7–7	1 38 0·42	0·0795	+74 14 25·6	9·6416n	−0·80	+10·7	55
15	7 49 28	−2 43·02	− 6 16·1	7–7	2 1 57·31	9·9792	+72 6 13·8	9·9763n	−0·50	+10·2	56

February 12–13.—Windy, clock difficult to hear well.

1887.		Greenwich Mean Time.	Comet—Star Δα	Comet—Star Δδ	No. of Comps.	Comet's App. R.A.	Log. (p×Δ)	Comet's App. Dec.	Log. (p×Δ)	Red. to App. Place.		Comp. Star.
		h m s	m s	′ ″		h m s		° ′ ″		s	″	
Feb.	16	8 27 29	−0 35·56	− 6 31·1	8–8	2 12 21·00	9·9912	+70 57 9·8	9·2880$_n$	−0·45	+9·9	57
	17	8 6 2	−0 54·91	+ 3 22·4	8–8	2 21 17·33	9·9363	+69 49 57·2	9·7414$_n$	−0.38	+9·5	58
	21	8 10 2	+3 25·03	−10 2·0	3–3	2 49 53·44	9·8385	+65 10 54·1	8·9408$_n$	−0·31	+8·0	59
	24	7 53 42	+1 44·17	− 9 31·2	2–2	3 5 40·85	9·7537	+61 43 13·5	8·6602	−0·28	+6·8	60
	25	7 43 33	+3 42·14	− 7 9·1	8–8	3 10 12·30	9·7187	+60 35 14·9	8·6426	−0·29	+6·4	61
	26	7 53 54	+3 29·51	− 0 3·9	8–8	3 14 28·54	9·7220	+59 27 3·3	9·5439	−0·29	+6·0	62
	27	8 20 43	+2 10·66	+ 0 49·9	8–8	3 18 32·78	9·7491	+58 18 24·5	9·9672	−0·29	+5·6	63
	28	7 53 43	+2 36·24	− 3 19·2	8–8	3 22 13·42	9·6944	+57 13 27·5	9·8167	−0·29	+5·2	64
Mar.	1	7 19 56	+2 33·16	+ 6 28·1	8–8	3 25 40·21	9·6148	+56 9 47·9	9·5382	−0·30	+4·8	65
	2	7 27 34	−2 42·03	− 0 3·4	4–4	3 29 2·93	9·6213	+55 4 53·8	9·7801	−0·27	+4·4	66
	6	8 25 5	+0 48·40	− 7 25·8	9–9	3 41 4·31	9·6822	+50 54 10·3	0·3100	−0·33	+2·9	67
	10	7 47 54	−2 16·61	− 2 41·2	7–7	3 51 1·21	9·6032	+47 5 7·5	0·3195	−0·35	+1·3	68
	11	8 39 48	−1 3·69	+ 9 16·9	8–8	3 53 23·98	9·6664	+46 8 36·9	0·4717	−0·37	+0·9	69
	12	9 3 17	−2 1·66	− 5 6·4	8–8	3 55 38·34	9·6814	+45 13 38·1	0·5389	−0·37	+0·6	70

February 21.—Observation obtained with difficulty between clouds.
March 2.—Comet very faint from haze and moonlight. Observation somewhat uncertain.
March 6–30.—Comet rather faint in moonlight.
March 10.—Comet in close proximity to several small stars. Observation a little uncertain.

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1887.		Greenwich Mean Time.	Comet—Star Δα	Comet—Star Δδ	No. of Comps.	Comet's App. R.A.	Log. ($p+\Delta$)	Comet's App. Dec.	Log. ($p\times\Delta$)	Red. to App. Place.		Comp. Star.
		h m s	m s	′ ″		h m s		° ′ ″		s	″	
Mar.	14	8 30 28	−0 59·75	+ 8 1·5	8–8	3 59 48·49	9·6426	+43 30 46·4	0·5073	−0·40	−0·2	71
	16	10 15 39	+1 19·07	− 5 23·6	6–8	4 3 56·69	9·6883	+41 47 8·1	0·7052	−0·43	−0·8	72
	18	10 37 16	+2 20·48	+ 6 56·9	8–8	4 7 44·28	9·6763	+40 11 1·7	0·7481	−0·45	−1·5	73
	23	8 15 48	+1 22·17	− 5 2·7	8–8	4 16 18·60	9·6024	+36 33 5·2	0·6081	−0·50	−3·0	74
	25	9 50 42	−2 5·87	+ 7 36·3	8–8	4 19 41·16	9·6477	+35 8 23·6	0·7416	−0·50	−3·6	75
	27	8 35 55	+1 34·96	− 5 27·7	8–8	4 22 45·41	9·6132	+33 51 12·1	0·6722	−0·54	−4·0	76
	28	8 11 1	−1 20·49	+ 3 12·8	8–8	4 24 15·87	9·5916	+33 13 46·8	0·6521	−0·53	−4·3	77
	30	8 52 58	+0 36·81	+ 4 25·2	9–9	4 27 19·77	9·6185	+31 58 32·5	0·7135	−0·56	−4·8	78
Apr.	10	9 52 19	+3 22·44	+ 8 50·8	4–4	4 42 37·35	9·6034	+25 58 28·3	0·8164	−0·65	−7·1	79
	11	9 31 27	+2 44·05	− 6 41·7	8–8	4 43 54·75	9·6049	+25 29 22·4	0·8053	−0·66	−7·2	80
	15	9 5 49	+1 12·30	− 6 23·7	3–3	4 48 58·26	9·5990	+23 38 32·6	0·8013	−0·68	−7·8	81
	16	9 7 8	+0 28·03	+ 5 9·8	8–8	4 50 13·51	9·5976	+23 12 8·1	0·8053	−0·68	−8·0	82
	17	9 23 52	−1 17·17	− 8 41·2	8–8	4 51 28·96	9·5945	+22 45 9·9	0·8187	−0·68	−8·1	83
	20	9 15 54	−1 11·71	+ 3 26·1	6–6	4 55 8·08	9·5906	+21 28 56·7	0·8220	−0·70	−8·5	84
	23	9 24 10	−2 21·97	− 0 4·5	5–5	4 58 44·50	9·5832	+20 15 53·3	0·8334	−0·71	−8·8	85

March 23–27–28.—Sky clear, a high wind prevailing.

April 10.—Comet excessively faint upon the Moon rising. April 11.—Definition bad.

April 20–23.—The comet has become very faint and of low altitude. The R.A. comparisons are rather uncertain.

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Comet III. 1887 . . . (*Barnard, February* 16, 1887.)

1887.		Greenwich Mean Time.	Comet—Star Δα	Comet—Star Δδ	No. of Comps.	Comet's App. R.A.	Log. (p×Δ)	Comet's App. Dec.	Log. (p×Δ)	Red. to App. Place.		Comp. Star.
		h m s	m s	′ ″		h m s		° ′ ″		s	″	
Feb.	28	9 1 56	−1 20·59	+ 4 55·6	8–8	4 43 18·03	9·4402	+22 52 11·7	0·6882	+0·10	−6·8	86
Mar.	13	8 34 46	−1 8·39	+ 2 14·6	8–8	3 37 24·29	9·5962	+32 7 12·7	0·6752	−0·47	−3·8	87
	14	9 11 32	+1 35·48	+ 0 53·2	5–5	3 34 35·54	9·6245	+32 27 13·0	0·7187	−0·51	−3·8	88
	16	8 44 14	+3 31·71	+ 3 47·6	7–7	3 29 37·55	9·6204	+33 2 13·7	0·6990	−0·58	−3·8	89
	18	8 58 4	+1 16·95	+ 2 26·8	7–7	3 25 11·14	9·6341	+33 32 40·0	0·7235	−0·62	−3·8	90
	19	8 33 2	−2 30·15	+ 3 13·0	8–8	3 23 12·24	9·6276	+33 45 59·8	0·7012	−0·63	−3·9	91
	23	9 0 2	−2 16·45	+10 6·5	8–8	3 16 2·12	9·6451	+34 33 20·0	0·7501	−0·73	−4·1	92
	27	9 21 53	−1 21·82	+ 2 54·2	8–8	3 10 6·49	9·6430	+35 10 55·8	0·7906	−0·81	−4·5	93
Apr.	10	9 12 36	+2 47·47	− 0 29·7	3–3	2 55 10·80	9·6162	+36 39 46·4	0·8398	−0·99	−6·2	94

February 28.—Comet excessively faint from fog and moonlight. No central condensation visible.
March 14.—Sky hazy: the comet is a diffused mass of light and affords no distinct point for bisection.
March 16.—The comet was better seen and a very faint nucleus was discernible towards the following side.
March 27. A faint star near the comet rendered the observation rather difficult and uncertain.

Comet IV. 1887 . . . (*Barnard, May* 12, 1887.)

1887.		Greenwich Mean Time.	Comet—Star Δα	Comet—Star Δδ	No. of Comps.	Comet's App. R.A.	Log. (p×Δ)	Comet's App. Dec.	Log. (p×Δ)	Red. to App. Place.		Comp. Star.
		h m s	m s	′ ″		h m s		° ′ ″		s	″	
June	9	11 11 31	−1 2·48	−5 19·0	8–8	16 4 17·81	8·5908	−11 3 21·6	0·8951	+2·07	+2·0	95
	10	10 51 7	−1 53·79	+5 13·8	8–8	16 6 28·99	7·9455	−10 17 6·1	0·8924	+2·07	+2·2	96
	12	11 37 5	−1 46·30	+3 56·7	8–8	16 10 59·75	8·9413	− 8 43 31·5	0·8846	+2·07	+2·8	97
	13	10 58 3	+1 17·06	+0 34·2	8–8	16 13 10·87	8·4459	− 7 59 35·7	0·8827	+2·06	+2·9	98

June 9.—Comet small, fairly bright, and with distinct nucleus.

1887MNRAS..48R..61P

1887.		Greenwich Mean Time.	Comet—Star Δα	Comet—Star Δδ	No. of Comps.	Comet's App. R.A.	Log. $p \times \Delta$)	Comet's App. Dec.	Log. ($p \times \Delta$)	Red. to App. Place.		Comp. Star.
		h m s	m s	′ ″		h m s		° ′ ″		s	″	
June	15	12 28 8	+1 20·97	+7 25·5	6–6	16 17 48·40	9·2323	− 6 28 18·4	0·8717	+2·06	+ 3·4	99
	17	11 2 12	−1 1·07	+6 27·6	8–8	16 22 10·35	8·6556	− 5 5 30·1	0·8691	+2·06	+ 4·0	100
	18	10 54 51	−1 53·33	−9 24·5	8–8	16 24 25·24	8·5582	− 4 24 32·8	0·8657	+2·07	+ 4·3	101
	20	10 57 0	+1 16·09	+4 15·5	8–8	16 28 56·76	8·6523	− 3 4 9·6	0·8587	+2·06	+ 4·7	102
	22	12 25 32	−1 24·16	+0 28·7	8–8	16 33 36·18	9·2612	− 1 46 5·7	0·8505	+2·07	+ 5·3	103
July	11	10 52 34	+0 11·05	−4 40·2	9–9	17 15 31·28	8·9775	+ 6 28 28·5	0·7996	+2·11	+10·0	104
	12	11 29 33	−1 15·54	+6 46·8	9–9	17 17 42·21	9·1855	+ 6 44 23·7	0·8002	+2·12	+10·2	105
	13	11 14 21	−5 22·07	+7 23·7	7–7	17 19 48·11	9·1259	+ 6 58 37·2	0·7975	+2·14	+10·5	106
	14	11 19 1	+3 58·89	−0 11·5	8–8	17 21 55·30	9·1565	+ 7 11 58·9	0·7965	+2·11	+10·5	107
	18	11 3 34	−4 17·36	+4 21·4	8–8	17 30 14·31	9·1195	+ 7 56 22·6	0·7904	+2·15	+11·6	108
	19	11 40 25	+3 52·14	−5 59·3	8–8	17 32 21·30	9·2732	+ 8 5 22·4	0·7932	+2·12	+11·6	109
	20	11 19 13	−3 11·85	+6 34·5	8–7	17 34 22·76	9·2051	+ 8 13 36·2	0·7901	+2·15	+11·9	110
	21	11 25 14	−1 42·06	−8 40·0	9–9	17 36 26·24	9·2350	+ 8 20 47·6	0·7902	+2·14	+12·1	111
	24	11 17 30	−3 10·89	+5 3·1	8–8	17 42 30·48	9·2281	+ 8 38 56·7	0·7879	+2·16	+12·7	112
	27	12 11 54	+1 5·23	+0 42·8	8–8	17 48 36·44	9·3950	+ 8 51 3·1	0·7952	+2·14	+13·2	113
	28	12 7 31	+3 3·90	+3 21·4	4–4	17 50 35·10	9·3901	+ 8 53 41·9	0·7945	+2·14	+13·3	113

June 15.—Comet faint, sky hazy. July 13.—Windy, clock difficult to hear well.

July 20.—Comet faint and difficult to observe. Sky less transparent than usual.

July 27.—Comet faint and observation rather uncertain.

July 28.—The comet has become faint and difficult to observe, especially in declination, owing to its peculiar form. It is much elongated from N. to S., and narrow from W. to E. This peculiarity has been noticed on several occasions lately.

All the above observations have been made with a dark-bar micrometer and an equatorial refractor of 10 inches aperture. They are corrected for differential refraction throughout.

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*Assumed Mean Places of Comparison Stars.**

Comet VII. 1886.

Comp. Star.	R.A. 1886·0. h	m	s	Decl. 1886·0. °	′	″	Authority.
1	20	9	53·74	−22	49	8·5	Equat. comparison with Arg. Oe$_2$ 20264.
2	20	37	47·13	−20	47	16·5	Equat. comparisons with Arg. Oe$_2$ 20832 and C.Z. 28388.
3	21	3	4·74	−18	52	50·7	Equat. comparisons with Arg. Oe$_2$ 21180 and Lam. 1353.
4	21	11	33·62	−18	27	44·6	$\frac{1}{3}$ (Gr. 7 yr. 2411 + Arm$_1$ 4607 + C.Z. 29215).
5	22	22	50·37	−11	28	39·3	Equat. comparison with 58 Aquarii.
6	22	28	6·28	−10	11	44·7	$\frac{1}{3}$ (Yarn. 9908 + Arm$_1$ 4956 + Glasg. 5871).
7	22	39	43·54	− 9	9	36·1	Equat. comparisons with Lam. 3956 and B.W.$_1$ 780.
8	22	48	52·24	− 8	36	59·1	Schj. 9392.
9	22	53	45·78	− 8	0	13·1	Lam. 4690.
10	23	9	47·31	− 6	19	4·6	$\frac{1}{3}$ (2 Yarn. 10242 + B.W.$_1$ 142).
11	23	18	30·32	− 5	1	19·2	Equat. comparison with B.W.$_1$ 302.
12	23	26	15·78	− 3	39	27·0	B.W.$_1$ 491 (Lalande's R.A. is 0^{s}·75 greater).
13	23	34	17·15	− 3	6	40·7	Equat. comparison with Lam. 4769.
14	23	39	33·08	− 2	34	40·3	Equat. comparison with B.W.$_1$ 812.
15	23	41	48·67	− 1	48	38·1	Equat. comparison with Lam. 9283.
	1887·0.			1887·0.			
16	0	43	49·63	+ 5	47	27·2	B.B. vi. + 5°·109.
17	1	23	8·06	+ 9	50	50·1	B.W.$_1$ 356.
18	1	41	34·32	+12	37	34·5	B.W.$_1$ 716.
19	2	48	57·41	+18	24	57·2	Equat. comparison with B.W.$_2$ 1097.
20	3	32	37·50	+21	28	28·4	B.W.$_2$ 655.

Comet VIII. 1886.

Comp. Star.	R.A. 1886·0 h	m	s	Decl. 1886·0 °	′	″	Authority.
21	20	7	59·31	+38	1	1·9	$\frac{1}{4}$ (3 Arm.$_2$ 2596 + Lal. 38806).
22	20	18	10·48	+39	53	43·0	γ *Cygni*, *Newcomb. Stand. Cat.* 905.
23	21	38	34·65	+52	29	18·9	Arg. Oe.$_1$ 22732–3.
24	21	44	4·49	+52	58	33·8	Arg. Oe.$_1$ 22887.
25	22	2	14·83	+54	41	48·0	$\frac{1}{2}$ (Arg. Oe.$_1$ 23418–9 + Rümker 9852).
26	22	8	31·01	+55	38	16·6	Equat. comparison with Arg. Oe$_1$ 23565–6.
27	1	19	50·48	+65	29	20·1	Lal. 2540. Orange-coloured star = No. 19 Chambers' Catalogue of red stars, *Monthly Notices*, xlvii. 6.
28	2	27	24·07	+66	27	15·9	Equat. comparison with Arg. Oe.$_1$ 2644.
29	3	0	4·15	+66	39	10·1	Equat. comparisons with Arg. Oe.$_1$ 3564 and B.B. vi. + 66°·249.

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* These stars will be observed, as far as possible, on the Meridian at Harrow.—G. L. T.

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Comet IX. 1886.

Comp. Star.	R.A. 1886·0. h	m	s	Decl. 1886·0. °	′	″	Authority.
30	11	19	47·81	+ 3	55	45·3	¼ (Gr. 7 yr. 1377 + Arm.$_1$ 2477 + Glasg. 2943 + Sant. 784).
31	12	5	41·88	+ 8	0	14·9	Yarn. 5085 (B.W.$_1$ 49, which is the same star, has greater declination by 3′ 6″·8).
32	12	12	39·19	+ 8	41	53·7	¼ (Gr. 6 yr. 793 + Arm$_1$ 2636 + Sant. 838 + Lal. 23048).
33	13	20	27·34	+ 13	16	12·0	Equat. comparison with ✶ 34.
34	13	22	7·89	+ 13	17	43·7	⅕ (2 Glasg. 3382 + Schj. 4814 + B.W.$_1$ 325 + Lal. 24912).
35	13	57	27·99	+ 15	31	29·7	B.W.$_2$ 1229.
36	15	5	57·64	+ 17	49	26·6	B.W.$_2$ 80 (B.W$_2$. 53 is the same star with an error of 1^{m}).
37	15	20	39·17	+ 17	58	12·4	Lal. 28144.
38	15	30	22·92	+ 18	2	9·1	½ (Gr. 9 yr. 1392 + Yarn. 6424).
39	15	48	38·48	+ 17	57	16·0	½ (B.W.$_2$ 1176 + Lal. 28961).
40	16	49	53·42	+ 17	5	55·4	Equat. comparison with B.B. vi. + 17°·3107
41	17	14	53·43	+ 16	0	6·3	⅓ (2 Arm.$_2$ 2043 + B.W.$_2$ 365).
42	17	31	52·24	+ 14	55	15·8	½ (B.W.$_2$ 929 + Lal. 32124). The mean of Bessel's rather discordant observations is taken. It does not agree with Lalande's).
43	17	53	58·68	+ 13	54	51·6	⅓ (2 Arm.$_2$ 2136 + B.W.$_1$ 1092).
44	18	5	26·97	+ 12	39	54·8	B.W.$_1$ 67.
45	18	17	16·95	+ 11	58	28·8	½ (Wash. Obs. + Lal. 33895).
46	18	23	42·89	+ 11	34	39·5	½ (B.B. vi. + 11°·3478 + Rümker 6524).
47	18	48	4·67	+ 9	31	9·8	½ (Glasg. 4632 + Arm.$_2$ 2299).
48	18	58	2·63	+ 8	7	41·2	¼ (2 Glasg. 4689 + B.W.$_1$ 1445 + Lal., 35624).
49	19	27	29·43	+ 4	47	8·9	½ (Glasg. 4825 + Arm.$_1$ 4091).
50	19	28	55·02	+ 4	19	19·5	Lam. 4376.
	1887·0.			1887·0.			
51	19	38	24·70	+ 3	14	40·1	½ (Lam. 4559 + B.W.$_1$ 947).
52	20	6	1·74	− 0	9	18·7	½ (Lam 7343 + Piazzi 18).
53	20	8	11·06	− 1	13	1·0	Lam. 7361. The decl. of Lal. 38760, which is the same star, is 19″·4 greater.

Comet II. 1887.

	1887·0 h	m	s	1887·0 °	′	″	
54	1	24	4·67	+ 75	18	9·9	Equat. comparison with Fedorenko 268.
55	1	36	31·33	+ 74	15	14·2	⅓ (2 Rad.$_1$ 503 + Arg. Oe$_1$ 1866).
56	2	4	40·83	+ 72	12	19·7	Equat. comparison with Arg. Oe$_1$ 2705.
57	2	12	57·01	+ 71	3	31·0	Equat. comparisons with B.B. vi. + 70°·187 and + 71°·139.

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Comp. Star.	R.A. 1887·0			Decl. 1887·0			Authority.
	h	m	s	°	′	″	
58	2	22	12·63	+69	46	25·4	B.B vi. + 69°·155.
59	2	46	28·72	+65	20	48·0	Rad.$_1$ 814.
60	3	3	56·96	+61	52	37·9	Equat. comparisons with B.B. vi. + 61°·521 and 543.
61	3	6	30·45	+60	42	17·5	Arg. Oe$_1$ 3563.
62	3	10	59·32	+59	27	1·2	A. G. Zones 408.
63	3	16	22·41	+58	17	29·0	Arg. Oe$_1$ 3731.
64	3	19	37·48	+57	16	41·4	Arg. Oe$_1$ 3772.
65	3	23	7·36	+56	3	15·1	Lal. 6364.
66	3	31	45·23	+55	4	52·7	B.B. vi. + 54°·701.
67	3	40	16·24	+51	1	33·2	½ (Rad.$_1$ 1068 + Arg. Oe$_1$ 4135).
68	3	53	18·17	+47	7	47·4	⅓ (2 Arm.$_2$ 491 + Lal. 7322).
69	3	54	28·04	+45	59	19·2	Equat. comparisons with Rümker, 2024 and B.B. vi. + 45°·857.
70	3	57	40·37	+45	18	44·0	B.W.$_2$ 1181.
71	4	0	48·64	+43	22	45·0	B.W.$_2$ 1255.
72	4	2	38·05	+41	52	32·5	B.W.$_2$ 1296.
73	4	5	24·25	+40	4	6·3	Lal. 7752.
74	4	14	56·93	+36	38	10·8	B.W.$_2$ 259.
75	4	21	47·53	+35	0	50·9	½ (B.B. vi. + 34°·883 + B.W.$_2$ 416).
76	4	21	10·98	+33	56	43·8	½ (B.W.$_2$ 409 + Lal. 8346).
77	4	25	36·89	+33	10	38·3	Equat. comparison with B.B. vi. + 33°·872.
78	4	26	43·52	+31	54	12·1	B.W.$_2$ 527.
79	4	39	15·56	+25	49	44·7	½ (B.W.$_2$ 822 + Lal. 8917).
80	4	41	11·37	+25	36	11·4	B.W.$_2$ 868.
81	4	47	46·64	+23	45	4·2	B.W.$_2$ 1024.
82	4	49	46·17	+23	7	6·2	B.W.$_2$ 1073.
83	4	52	46·82	+22	53	59·1	B.B. vi. + 22°·792.
84	4	56	20·49	+21	25	39·0	*Newcomb. Stand. Cat.* 239.
85	5	1	7·18	+20	16	6·6	*Newcomb. Stand. Cat.* 242.

Comet III. 1887.

	1887·0			1887·0			
86	4	44	38·52	+22	47	22·9	B.B. vi. + 22°·764.
87	3	38	33·15	+32	5	1·9	B.B. vi. + 31°·645.
88	3	33	0·57	+32	26	23·6	B.W.$_2$ 663.
89	3	26	6·42	+32	58	29·8	½ (B.W.$_2$ 499 + Lal. 6491).
90	3	23	54·81	+33	30	17·0	B.W.$_2$ 447.
91	3	25	43·02	+33	42	50·7	Equat. comparison with B.W.$_2$ 512.
92	3	18	19·30	+34	23	17·6	Equat. comparisons with B.W.$_2$ 306 and 381.

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Comp. Star.	R.A. 1887·0.			Decl. 1887·0.			Authority.
	h	m	s	°	′	″	
93	3	11	29·12	+35	8	6·1	½ (B.W.$_2$ 199 + Lal. 6055).
94	2	52	24·32	+36	40	22·2	Equat. comparison with B.B. vi. + 36°·608.
Comet IV. 1887.							
95	16	5	18·22	−10	58	4·5	Equat. comparison with B.W.$_1$ 63.
96	16	8	20·71	−10	22	22·1	⅓ (2 Yarn. 6715 + B.W.$_1$ 111).
97	16	12	43·98	− 8	47	30·9	⅓ (2 Schj. 5761 + Lal. 29697).
98	16	11	51·74	− 8	0	12·7	B.W.$_1$ 184.
99	16	16	25·37	− 6	35	47·2	½ (B.W.$_1$ 272 + Schj. 5779).
100	16	23	9·36	− 5	12	1·6	⅓ (2 Schj. 5822 + Lal. 29982).
101	16	26	16·50	− 4	15	12·7	Schj. 5841.
102	16	27	38·61	− 3	8	29·8	Equat. comparison with Schj. 5851.
103	16	34	58·27	− 1	46	39·7	½ (Schj. 5901 + Lam. 5252).
104	17	15	18·12	+ 6	32	58·7	⅓ (2 Glasg. 4271 + B.W.$_1$ 236).
105	17	18	55·62	+ 6	37	26·8	Arm.$_2$ 2052.
106	17	25	8·04	+ 6	51	3·0	B.B. vi. + 6°·3434.
107	17	17	54·30	+ 7	11	59·9	B.B. vi. + 7°·3355.
108	17	34	29·53	+ 7	51	49·7	½ (Glasg. 4351 + Schj. 6332).
109	17	28	27·04	+ 8	11	10·1	Lal. 31996.
110	17	37	32·46	+ 8	6	49·8	½ (B.W.$_1$ 701 + Lal. 32337).
111	17	38	6·16	+ 8	29	15·4	B.B. vi. + 8°·3478.
112	17	45	39·21	+ 8	33	41·0	½ (Glasg. 4405 + Schj. 6418).
113	17	47	29·06	+ 8	50	7·2	B.B. vi. + 8°·3526.

Col. Tomline's Observatory, Orwell Park:
1887. *October* 19.

Occultation of Regulus by the Moon, observed at Dunsink Observatory. Communicated by Sir R. S. Ball, LL.D., F.R.S.

The occultation of *Regulus* by the Moon, which took place on October 12, was observed here with the 12-inch equatorial by Mr. Arthur A. Rambaut. The disappearance occurred at

$16^{h}\ 16^{m}\ 54^{s}\!\cdot\!2$ Dunsink mean time.

The star suffered no perceptible diminution of brightness as it approached the bright limb of the Moon. It appeared to enter undimmed for a short distance within the disc, and was then suddenly extinguished.

The reappearance occurred at

$17^{h}\ 20^{m}\ 36^{s}\!\cdot\!0$ Dunsink mean time.

The star flashed out in full brilliance with a suddenness almost startling.

Dunsink Observatory: October 17, 1887.